

AMENDMENTS TO THE CLAIMS

1-4. (Canceled)

5. (Currently Amended) A recording apparatus for recording, on a recording medium, an audio video stream which is obtained by coding an audio video signal including an audio signal and a video signal, said apparatus comprising:

a packing unit operable to perform ~~for performing~~ packing to divide the audio video stream into plural streams corresponding to packs ~~as data units~~ each having a predetermined size, and operable to output ~~outputting~~ the audio video stream corresponding to each pack as pack data, said packs being data units for use in managing a recording position of the audio video stream on the recording medium;

a recorder operable to record ~~for recording~~ each pack data on the recording medium, as an access unit to the recording medium; and

an attribute detector operable to detect ~~for detecting~~ an attribute relating to at least one of the video signal and the audio signal, and output ~~outputting~~ attribute data indicating the attribute; and

wherein, for each of said packs, said packing unit performs ~~performing~~ the packing such that a position in the audio video stream, where the attribute changes, is positioned at ~~the~~ a head of the pack.

6. (Original) The recording apparatus of Claim 5, wherein:

said attribute detector detects a video attribute relating to the video signal and an audio attribute relating to the audio signal on the basis of the audio video stream, and outputs video attribute data indicating the video attribute and audio attribute data indicating the audio attribute; and

said recorder records the video attribute data and the audio attribute data in predetermined areas of the recording medium, respectively.

7. (Currently Amended) The recording apparatus of Claim 5 further comprising:

an information generator operable to detect ~~for detecting~~ a recording position in the audio video stream recorded on the recording medium, which recording position corresponds to a point where at least one of the audio attribute and the video attribute changes, or a recording time of the audio video stream based on a reference time, which recording time corresponds to the attribute change point, and operable to output ~~outputting~~ attribute change information indicating the recording position or the recording time; and

wherein said recorder records the attribute change information on the recording medium.

8. (Currently Amended) The recording apparatus of Claim 5, wherein:

said attribute detector detects ~~the~~ a video resolution of the video signal as an attribute relating to the video signal, and outputs video resolution data indicating the resolution; and

said packing unit performs the packing, on the basis of the video resolution data, such that a position in the video stream, where the video resolution changes, is positioned at ~~the~~ a head of one of the packs ~~pack~~.

9. (Currently Amended) The recording apparatus of Claim 5, wherein:

said attribute detector detects ~~the~~ an aspect ratio of the video signal as an attribute relating to the video signal, and outputs aspect ratio data indicating the aspect ratio; and

said packing unit performs the packing, on the basis of the aspect ratio data, such that a position in the video stream, where the aspect ratio changes, is positioned at ~~the~~ a head of one of the packs ~~pack~~.

10. (Currently Amended) A recording apparatus for recording, on a recording medium, an audio video stream which is obtained by coding an audio video signal including an audio signal and a video signal, said apparatus comprising:

a video object composer operable to divide ~~for dividing~~ the audio video stream into plural streams corresponding to management units for use in managing the audio video stream, and operable to output ~~outputting~~ the stream corresponding to each management unit as video object data;

a recorder operable to record ~~for recording~~ management information for use in managing each video object data on the recording medium; and

an attribute detector operable to detect a video resolution or an aspect ratio of the video signal as for detecting an attribute relating to ~~at least one of the video signal and the audio signal~~ on the basis of the audio video stream, and operable to output ~~outputting~~ attribute data indicating the video resolution or the aspect ratio ~~the attribute~~; and

wherein when the attribute changes, said video object composer ~~dividing~~ divides the audio video stream, on the basis of the attribute data, such that a portion of the audio video stream before the attribute change point and a portion of the audio video stream after the attribute change point are output as different video object data.

11. (Original) The recording apparatus of Claim 10, wherein said management information includes information relating to the recording position of each video object data on the recording medium, or the recording time of each video object data based on a reference time.

12. (Currently Amended) The recording apparatus of Claim 10, wherein:

said attribute detector detects the video resolution or the aspect ratio which is a video attribute relating to the video signal and an audio attribute relating to the audio signal on the basis of the audio video stream, and outputs video attribute data indicating the video attribute and audio attribute data indicating the audio attribute; and

said management information includes video attribute information indicating the video attribute and audio attribute information indicating the audio attribute.

13. (Original) The recording apparatus of Claim 10, wherein:

said attribute detector detects the video resolution of the video signal as an attribute relating to the video signal, and outputs video resolution data indicating the resolution; and

when the video resolution changes, said video object composer divides the video stream, on the basis of the video resolution data, such that a portion of the video stream before the video resolution change point and a portion of the video stream after the video resolution change point are output as different video object data.

14. (Currently Amended) The recording apparatus of Claim 10, wherein:

said attribute detector detects the aspect ratio of the video signal as an attribute relating to the video signal, and outputs aspect ratio data indicating the aspect ratio; and

when the aspect ~~ratio~~ ratio changes, said video object composer divides the video stream, on the basis of the aspect ratio data, such that a portion of the video stream before the aspect ratio change point and a portion of the video stream after the aspect ratio change point are output as different video object data.

15. (Currently Amended) A coding apparatus for coding a video signal, comprising:

a video encoder ~~for subjecting~~ operable to subject the video signal to intra-frame or inter-frame coding such that a frame group ~~of frames~~ including at least one frame subjected to the inter-frame coding is generated, and a video stream corresponding to the frame group is output as a stream unit that can be accessed randomly; and

a video attribute detector ~~for detecting~~ operable to detect a video resolution or an aspect ratio of the video signal as a video attribute of the video signal on the basis of the video signal, and operable to output ~~outputting~~ video attribute data indicating the video attribute; and

wherein said video encoder forms ~~forming~~ the frame group such that a specific frame, whose video attribute is different from that of a frame positioned just before it, is stored as a head frame in the frame group.

16. (Currently Amended) The coding apparatus of Claim 15 further comprising:

an audio attribute detector operable to detect ~~for detecting~~ an audio attribute of an audio signal appended to the video signal, and operable to output ~~outputting~~ audio attribute data indicating the audio attribute; and

wherein said video encoder forms ~~forming~~ the frame group such that a specific frame, whose video or audio attribute is different from that of a frame positioned just before it, is stored as a head frame in the frame group.

17. (Currently Amended) The coding apparatus of Claim 16 further comprising:

a packing unit operable to perform ~~for performing~~ packing to divide the video stream into plural streams corresponding to packs as data units each having a predetermined size, and operable to output ~~outputting~~ the stream corresponding to each pack as pack data; and

wherein, for each of said packs, said packing unit performing ~~performs~~ the packing such that a position in the video stream, where the video or audio attribute changes, is positioned at the a head of the pack.

18. (Currently Amended) The coding apparatus of Claim 15, wherein said video encoder performs coding on each frame in ~~a specific~~ the frame group including the specific frame, without referring to the video signal corresponding to frames in a frame group which has been coded previously to the ~~specific~~ frame group.

19. (Original) The coding apparatus of Claim 15, wherein:

said video attribute detector detects the video resolution of the video signal as a video attribute on the basis of the video signal, and outputs video resolution data indicating the video resolution; and

said video encoder forms the frame group, on the basis of the video resolution data, such that a specific frame, whose video resolution is different from that of a frame positioned just before it, is stored as a head frame in the frame group.

20. (Currently Amended) The coding apparatus of Claim 19 further comprising:

a packing unit operable to perform ~~for performing~~ packing to divide the video stream into plural streams corresponding to packs as data units each having a predetermined size, and operable to output ~~outputting~~ the stream corresponding to each pack as pack data; ~~and~~

wherein said packing unit performs ~~performing~~ the packing such that a position in the video stream, where the video resolution changes, is positioned at ~~the~~ a head of one of the packs pack.

21. (Original) The coding apparatus of Claim 15 wherein:

said attribute detector detects the aspect ratio of the video signal as the video attribute on the basis of the video signal, and outputs aspect ratio data indicating the aspect ratio; and

said video encoder forms the frame group, on the basis of the aspect ratio data, such that a specific frame, whose aspect ratio is different from that of a frame positioned just before it, is stored as a head frame in the frame group.

22. (Currently Amended) The coding apparatus of Claim 21 further comprising:

a packing unit operable to perform ~~for performing~~ packing to divide the video stream into plural streams corresponding to packs as data units each having a predetermined size, and operable to output ~~outputting~~ the stream corresponding to each pack as pack data; and

wherein said packing unit performs ~~performing~~ the packing such that a position in the video stream, where the aspect ratio changes, is positioned at ~~the a~~ head of one of the packs ~~pack~~.